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                 INPADOCDB and INPAFAMDB enhanced with Chinese legal
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                 records back to 1992
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                 enhanced on STN
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         JUN 26 NUTRACEUT and PHARMAML no longer updated
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         JUN 29
                 IMSCOPROFILE now reloaded monthly
                 EPFULL adds Simultaneous Left and Right Truncation
         JUN 29
NEWS 19
                 (SLART) to AB, MCLM, and TI fields
         JUL 09
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NEWS 20
                 Truncation (SLART) to AB, CLM, MCLM, and TI fields
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L1 ANSWER 1 OF 22 USPATFULL on STN

 ${
m TI}$ Novel peptides comprising repetitive units of amino acids and DNA sequences encoding the same

AB Novel polypeptides comprising repetitive units of amino acids, as well as synthetic genes encoding the subject polypeptides are provided. The subject polypeptides are characterized by comprising repetitive units of amino acids, where the repetitive units are present in naturally occurring proteins, particularly naturally occurring structural proteins. The subject polypeptides find use in a variety of applications, such as structural components of prosthetic devices, synthetic fibers, and the like.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

2009:103565 USPATFULL ACCESSION NUMBER:

TITLE: Novel peptides comprising repetitive units of amino

acids and DNA sequences encoding the same

Ferrari, Franco A., La Jolla, CA, UNITED STATES INVENTOR(S):

Cappello, Joseph, San Diego, CA, UNITED STATES

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc. (U.S. corporation)

> NUMBER KIND DATE ______

US 20090093621 A1 20090409 US 2006-415484 A1 20060427 (11) PATENT INFORMATION:

APPLICATION INFO.:

RELATED APPLN. INFO.: Continuation of Ser. No. US 2002-96986, filed on 12 Mar

2002, ABANDONED Division of Ser. No. US 1999-444791, filed on 22 Nov 1999, Pat. No. US 6355776 Continuation of Ser. No. US 1995-482085, filed on 7 Jun 1995, Pat.

No. US 6018030

DOCUMENT TYPE: Utility APPLICATION FILE SEGMENT:

LEGAL REPRESENTATIVE: MORGAN, LEWIS & BOCKIUS, LLP, ONE MARKET SPEAR STREET

TOWER, SAN FRANCISCO, CA, 94105, US

NUMBER OF CLAIMS: EXEMPLARY CLAIM: 1 - 20

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 5424

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1ANSWER 2 OF 22 USPATFULL on STN

ΤI Methods for Treating Body Tissue

AΒ Methods of treating body tissue including repairing defects in body tissue as well as augmenting body tissue. Body tissue defects are repaired by injecting a polymeric adhesive composition through an injector into the region of the defect and allowing the adhesive composition to cure to repair the defect or to form an implant that adheres to at least one surface tissue in the region of the defect. Body tissue is augmented by filling a defect void with a polymeric adhesive composition and allowing it to cure.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 2009:31444 USPATFULL

Methods for Treating Body Tissue TITLE:

INVENTOR(S): Stedronsky, Erwin R., San Clemente, CA, UNITED STATES

Cappello, Joseph, San Diego, CA, UNITED STATES

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

UNITED STATES (U.S. corporation)

NUMBER KIND DATE ______

US 20090028813 A1 20090129 US 2007-877572 A1 20071023 (11) PATENT INFORMATION: APPLICATION INFO.:

Continuation of Ser. No. US 2005-201606, filed on 10 RELATED APPLN. INFO.:

Aug 2005, PENDING Continuation of Ser. No. US

2002-117931, filed on 5 Apr 2002, Pat. No. US 7300663 Continuation of Ser. No. US 1999-451206, filed on 29 Nov 1999, Pat. No. US 6423333 Continuation of Ser. No.

US 1996-642246, filed on 2 May 1996, Pat. No. US 6033654 Continuation-in-part of Ser. No. US

1995-435641, filed on 5 May 1995, Pat. No. US 5817303

Utility DOCUMENT TYPE: APPLICATION FILE SEGMENT:

LEGAL REPRESENTATIVE: MORGAN, LEWIS & BOCKIUS, LLP, ONE MARKET SPEAR STREET

TOWER, SAN FRANCISCO, CA, 94105, US

NUMBER OF CLAIMS: 12 EXEMPLARY CLAIM: 1 LINE COUNT: 2919

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 3 OF 22 USPATFULL on STN
TI Methods for Treating Body Tissue

AB Methods of treating body tissue including repairing defects in body tissue as well as augmenting body tissue. Body tissue defects are repaired by injecting a polymeric adhesive composition through an injector into the region of the defect and allowing the adhesive composition to cure to repair the defect or to form an implant that adheres to at least one surface tissue in the region of the defect. Body tissue is augmented by filling a defect void with a polymeric adhesive composition and allowing it to cure.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2009:25568 USPATFULL

TITLE: Methods for Treating Body Tissue

INVENTOR(S): Stredonsky, Edwin R., San Clemente, CA, UNITED STATES

Cappello, Joseph, San Diego, CA, UNITED STATES

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

UNITED STATES (U.S. corporation)

RELATED APPLN. INFO.: Continuation of Ser. No. US 2005-201606, filed on 10

Aug 2005, PENDING Continuation of Ser. No. US

2002-117931, filed on 5 Apr 2002, Pat. No. US 7300663 Continuation of Ser. No. US 1999-451206, filed on 29

Continuation of Ser. No. US 1999-451206, filed on 29 Nov 1999, Pat. No. US 6423333 Continuation of Ser. No. US 1006 (42346) filed on 2 May 1006 Pat. No. US

US 1996-642246, filed on 2 May 1996, Pat. No. US 6033654 Continuation-in-part of Ser. No. US

1995-435641, filed on 5 May 1995, Pat. No. US 5817303

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: MORGAN, LEWIS & BOCKIUS, LLP, ONE MARKET SPEAR STREET

TOWER, SAN FRANCISCO, CA, 94105, US

NUMBER OF CLAIMS: 22 EXEMPLARY CLAIM: 1 LINE COUNT: 2942

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 4 OF 22 USPATFULL on STN

TI Methods for treating body tissue

AB Methods of treating body tissue including repairing defects in body tissue as well as augmenting body tissue. Body tissue defects are repaired by injecting a polymeric adhesive composition through an injector into the region of the defect and allowing the adhesive composition to cure to repair the defect or to form an implant that adheres to at least one surface tissue in the region of the defect. Body tissue is augmented by filling a defect void with a polymeric adhesive composition and allowing it to cure.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 2006:33871 USPATFULL

TITLE: Methods for treating body tissue

INVENTOR(S): Stedronsky, Erwin R., San Clemente, CA, UNITED STATES

Cappello, Joseph, San Diego, CA, UNITED STATES

NUMBER KIND DATE ______ US 20060029638 A1 20060209 US 2005-201606 A1 20050810 (11) PATENT INFORMATION: APPLICATION INFO.:

Continuation of Ser. No. US 2002-117931, filed on 5 Apr RELATED APPLN. INFO.: 2002, PENDING Continuation of Ser. No. US 1999-451206, filed on 29 Nov 1999, GRANTED, Pat. No. US 6423333

Continuation of Ser. No. US 1996-642246, filed on 2 May 1996, GRANTED, Pat. No. US 6033654 Continuation-in-part of Ser. No. US 1995-435641, filed on 5 May 1995,

GRANTED, Pat. No. US 5817303

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: DORSEY & WHITNEY LLP, 555 CALIFORNIA STREET, SUITE

1000, SUITE 1000, SAN FRANCISCO, CA, 94104, US

NUMBER OF CLAIMS: 46 EXEMPLARY CLAIM: 1 LINE COUNT: 3068

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ANSWER 5 OF 22 USPATFULL on STN ΤI Intein-mediated protein splicing

AB The present invention provides methods for intein-mediated protein splicing, particularly in plants. This permits in vivo and in vitro synthesis of homogeneous and large multi-functional hybrid protein polymers and circular proteins. Additionally, methods are provided which are suitable for the regulation of transgene expression, such that a particular transgene is expressed only under selected environmental conditions, in selected plant tissues, at selected development stages, or in selected plant generations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 2004:222914 USPATFULL

TITLE: Intein-mediated protein splicing

INVENTOR(S): Yadav, Narendra S., Chadds Ford, PA, UNITED STATES

Yang, Jianjun, Hockessin, DE, UNITED STATES

NUMBER KIND DATE US 20040172688 A1 20040902 US 2004-799326 A1 20040312 (10) PATENT INFORMATION: APPLICATION INFO.:

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2003-356088, filed

on 31 Jan 2003, PENDING

NUMBER DATE _____ -----

PRIORITY INFORMATION: US 2002-354395P 20020204 (60)

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT

RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417

LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 57 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 19 Drawing Page(s)

LINE COUNT: 4122

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

Synthetic proteins for in vivo drug delivery and tissue augmentation ΤI AB Methods and compositions are provided which are useful for delivering a biologically active substance to a localized site in vivo and for altering the physical dimensions of a body tissue. These methods and compositions employ protein polymers having varying ratios of elastin-like, collagen-like, keratin-like repeating units and repeating units which promote protein crystallization such as silk-like repeating units. By varying the length of segments of the repeating units and/or the concentration of the protein polymers in the composition, the rate of delivery of a biologically active substance to a localized site can be greatly varied. Moreover, because the compositions are capable of acquiring a non-liquid form under normal physiological conditions, they find use as biocompatible tissue augmentation products.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:251566 USPATFULL

TITLE: Synthetic proteins for in vivo drug delivery and tissue

augmentation

INVENTOR(S): Cappello, Joseph, San Diego, CA, UNITED STATES

Stedronsky, Erwin R., La Jolla, CA, UNITED STATES

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc. (U.S. corporation)

NUMBER DATE KIND _____ PATENT INFORMATION: US 20030176355 A1 20030918 US 2002-131395 A1 20020422 APPLICATION INFO.: 20020422 (10)Division of Ser. No. US 1997-806029, filed on 24 Feb RELATED APPLN. INFO.: 1997, GRANTED, Pat. No. US 6380154 Continuation-in-part of Ser. No. US 1994-212237, filed on 11 Mar 1994, GRANTED, Pat. No. US 5606019

Utility DOCUMENT TYPE: FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP, Suite 3400,

Four Embarcadero Center, San Francisco, CA, 94111-4187

NUMBER OF CLAIMS: 38 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 8 Drawing Page(s)

LINE COUNT: 2388

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 7 OF 22 USPATFULL on STN

TΙ Intein-mediated protein splicing

AΒ The present invention provides methods for intein-mediated protein splicing, particularly in plants. This permits in vivo and in vitro synthesis of homogeneous and large multi-functional hybrid protein polymers and circular proteins. Additionally, methods are provided which are suitable for the regulation of transgene expression, such that a particular transgene is expressed only under selected environmental conditions, in selected plant tissues, at selected development stages, or in selected plant generations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:239373 USPATFULL

TITLE: Intein-mediated protein splicing

INVENTOR(S): Yadav, Narendra S., Chadds Ford, PA, UNITED STATES

Yang, Jianjun, Hockessin, DE, UNITED STATES

NUMBER KIND DATE PATENT INFORMATION: US 20030167533 A1 20030904 APPLICATION INFO.: US 2003-356088 A1 20030131 (10) NUMBER DATE

PRIORITY INFORMATION: US 2002-354395P 20020204 (60)

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT

RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417

LANCASTER PIKE, WILMINGTON, DE, 19805

NUMBER OF CLAIMS: 57 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 18 Drawing Page(s)

LINE COUNT: 3908

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 8 OF 22 USPATFULL on STN

TI Tissue adhesive using synthetic crosslinking

AB Proteinaceous polymers having repetitive units from naturally occurring structural proteins are employed as backbones for functionalities for crosslinking to provide strongly adherent tissue adhesives and sealants. Particularly, block copolymers of elastin and fibroin are employed having lysine substitutions in spaced apart units, where the amino group can be crosslinked using difunctional crosslinking agents.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:152923 USPATFULL

TITLE: Tissue adhesive using synthetic crosslinking

INVENTOR(S): Stedronsky, Erwin R., San Clemente, CA, UNITED STATES

Cappello, Joseph, San Diego, CA, UNITED STATES

PATENT ASSIGNEE(S): Protein Polymer Technologies (U.S. corporation)

	NUMBER	KIND	DATE	
-				
PATENT INFORMATION: U	JS 20030104589	A1	20030605	
J	JS 7300663	В2	20071127	
APPLICATION INFO.:	JS 2002-117931	A1	20020405	(10)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1999-451206, filed on 29 Nov 1999, GRANTED, Pat. No. US 6423333 Continuation of Ser. No. US 1996-642246, filed on 2 May 1996, GRANTED,

Pat. No. US 1996-642246, Tiled on 2 May 1996, GRANTED, Pat. No. US 6033654 Continuation-in-part of Ser. No. US 1995-435641, filed on 5 May 1995, GRANTED, Pat. No. US 5817303

Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: RICHARD F. TRECARTIN, ESQ., FLEHR HOHBACH TEST

ALBRITTON & HERBERT LLP, Suite 3400, Four Embarcadero

Center, San Francisco, CA, 94111-4187

NUMBER OF CLAIMS: 28
EXEMPLARY CLAIM: 1
LINE COUNT: 3098

DOCUMENT TYPE:

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 9 OF 22 USPATFULL on STN

TI Novel peptides comprising repetitive units of amino acids and DNA

sequences encoding the same

AB Novel polypeptides comprising repetitive units of amino acids, as well as synthetic genes encoding the subject polypeptides are provided. The subject polypeptides are characterized by comprising repetitive units of amino acids, where the repetitive units are present in naturally occurring proteins, particularly naturally occurring structural proteins. The subject polypeptides find use in a variety of

applications, such as structural components of prosthetic devices, synthetic fibers, and the like.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2003:120980 USPATFULL

Novel peptides comprising repetitive units of amino TITLE:

acids and DNA sequences encoding the same

INVENTOR(S): Ferrari, Franco A., La Jolla, CA, UNITED STATES

Richardson, Charles, Florence, MT, UNITED STATES Chambers, James, Encinitas, CA, UNITED STATES Causey, Stuart, Palo Alto, CA, UNITED STATES Pollock, Thomas J., San Diego, CA, UNITED STATES Cappello, Joseph, San Diego, CA, UNITED STATES Crissman, John W., San Diego, CA, UNITED STATES

Protein Polymer Technologies, Inc. (U.S. corporation) PATENT ASSIGNEE(S):

> NUMBER KIND DATE _____

US 20030083464 A1 20030501 US 2002-96986 A1 20020312 PATENT INFORMATION: APPLICATION INFO.: 20020312 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-444791, filed on 22 Nov

1999, GRANTED, Pat. No. US 6355776 Continuation of Ser. No. US 1995-482085, filed on 7 Jun 1995, GRANTED, Pat. No. US 6018030 Continuation-in-part of Ser. No. US 1993-175155, filed on 29 Dec 1993, GRANTED, Pat. No. US 5641648 Continuation-in-part of Ser. No. US 1993-53049, filed on 22 Apr 1993, ABANDONED Continuation of Ser. No. US 1987-114618, filed on 29 Oct 1987, GRANTED, Pat.

No. US 5243038 Continuation-in-part of Ser. No. US

1986-927258, filed on 4 Nov 1986, ABANDONED

DOCUMENT TYPE: Utility FILE SEGMENT: APPLICATION

FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP, Suite 3400, LEGAL REPRESENTATIVE:

Four Embarcadero Center, San Francisco, CA, 94111-4187

NUMBER OF CLAIMS: 20 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 10 Drawing Page(s)

LINE COUNT: 5286

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

- L1 ANSWER 10 OF 22 USPATFULL on STN
- ΤI Sealing or filling tissue defects using polyfunctional crosslinking agents and protein polymers

AB Proteinaceous polymers having repetitive units from naturally occurring structural proteins are employed as backbones for functionalities for crosslinking to provide strongly adherent tissue adhesive compositions for bonding together separated tissue, and for sealing or filling tissue defects by injecting the compositions into the defects. Particularly, block copolymers having repeating units of elastin and fibroin are employed having lysine substitutions in spaced apart units, where the amino group can be crosslinked using difunctional crosslinking agents such as glutaraldehyde, activated diolefins, diisocyanates, acid anhydrides or diamines. The protein polymer contains at least 40 weight percent of repetitive units of 3 to 30 amino acids, preferably 3 to 15 amino acids, of at least one naturally occurring structural protein and at least two amino acids containing a functional group capable of reacting with the crosslinking agent. The protein polymer generally has a molecular weight of at least about 30 kD and not more than 250 kD. A preferred protein polymer contains at least 70 weight percent of repetitive units of Gly-Ala-Gly-Ala-Gly-Ser and Gly-Val-Gly-Val-Pro, where in at least two units an amino acid is substituted with one of

lysine or arginine, and the protein polymer has a lysine and arginine equivalent weight in the range of 1 to 20 kD and contains at least two amino acids having a functional group capable of reacting with at least one of aldehyde, isocyanate, thioisocyanate and activated carboxy. The protein polymer is produced by recombinant DNA technology, and a kit may be formed containing the crosslinking agent and protein polymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:181388 USPATFULL

TITLE: Sealing or filling tissue defects using polyfunctional

crosslinking agents and protein polymers

INVENTOR(S): Stedronsky, Erwin R., San Clemente, CA, United States

Cappello, Joseph, San Diego, CA, United States

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

APPLICATION INFO.: US 1999-451206 19991129 (9)
RELATED APPLN. INFO.: Continuation of Ser. No. US 1996-642246, filed on 2 May

1996, now patented, Pat. No. US 6033654

Continuation-in-part of Ser. No. US 1995-435641, filed

on 5 May 1995, now patented, Pat. No. US 5817303

DOCUMENT TYPE: Utility FILE SEGMENT: GRANTED

PRIMARY EXAMINER: Naff, David M.

LEGAL REPRESENTATIVE: Flehr Hohbach Test Albritton & Herbert, Trecartin,

Esq., Richard F.

NUMBER OF CLAIMS: 8 EXEMPLARY CLAIM: 2

NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)

LINE COUNT: 2783

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 11 OF 22 USPATFULL on STN

SYNTHETIC PROTEINS FOR IN VIVO DRUG DELIVERY AND TISSUE AUGMENTATION
Methods and compositions are provided which are useful for delivering a biologically active substance to a localized site in vivo and for altering the physical dimensions of a body tissue. These methods and compositions employ protein polymers having varying ratios of elastin-like, collagen-like, keratin-like repeating units and repeating units which promote protein crystallization such as silk-like repeating units. By varying the length of segments of the repeating units and/or the concentration of the protein polymers in the composition, the rate of delivery of a biologically active substance to a localized site can be greatly varied. Moreover, because the compositions are capable of acquiring a non-liquid form under normal physiological conditions, they find use as biocompatible tissue augmentation products.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2002:85525 USPATFULL

TITLE: SYNTHETIC PROTEINS FOR IN VIVO DRUG DELIVERY AND TISSUE

AUGMENTATION

INVENTOR(S): CAPPELLO, JOSEPH, SAN DIEGO, CA, UNITED STATES STEDRONSKY, ERWIN R., SAN DIEGO, CA, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 20020045567 A1 20020418 US 6380154 B2 20020430

APPLICATION INFO.: US 1997-806029 A1 19970224 (8)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: FLEHR HOHBACH TEST ALBRITTON AND HERBERT, SUITE 3400,

FOUR EMBARCADERO CENTER, SAN FRANCISCO, CA, 94111

NUMBER OF CLAIMS: 38 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 8 Drawing Page(s)

LINE COUNT: 2392

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 12 OF 22 USPATFULL on STN

 ${\tt TI}$ Peptides comprising repetitive units of amino acids and DNA sequences

encoding the same

AB Novel polypeptides comprising repetitive units of amino acids, as well as synthetic genes encoding the subject polypeptides are provided. The subject polypeptides are characterized by comprising repetitive units of amino acids, where the repetitive units are present in naturally occurring proteins, particularly naturally occurring structural proteins. The subject polypeptides find use in a variety of applications, such as structural components of prosthetic devices, synthetic fibers, and the like.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 2002:51095 USPATFULL

TITLE: Peptides comprising repetitive units of amino acids and

DNA sequences encoding the same

INVENTOR(S): Ferrari, Franco A., La Jolla, CA, United States

Richardson, Charles, Florence, MT, United States Chambers, James, San Diego, CA, United States Causey, Stuart, Palo Alto, CA, United States Pollock, Thomas J., San Diego, CA, United States Cappello, Joseph, San Diego, CA, United States Crissman, John W., San Diego, CA, United States

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1995-482085, filed on 7 Jun

1995, now patented, Pat. No. US 6018030

Continuation-in-part of Ser. No. US 1993-175155, filed on 29 Dec 1993, now patented, Pat. No. US 5641648, issued on 24 Jun 1997 Continuation-in-part of Ser. No. US 1993-53049, filed on 22 Apr 1993, now abandoned Continuation of Ser. No. US 1987-114618, filed on 29 Oct 1987, now patented, Pat. No. US 5243038, issued on

7 Sep 1993 Continuation—in—part of Ser. No. US 1986—927258, filed on 4 Nov 1986, now abandoned

DOCUMENT TYPE: Utility FILE SEGMENT: GRANTED

PRIMARY EXAMINER: McKelvey, Terry ASSISTANT EXAMINER: Sandals, William

LEGAL REPRESENTATIVE: Flehr Hohbach Test Albritton & Herbert LLP, Trecartin,

Esq., Richard F.

NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 5152

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 13 OF 22 USPATFULL on STN

TI Bonding together tissue with adhesive containing polyfunctional crosslinking agent and protein polymer

AB Proteinaceous polymers having repetitive units from naturally occurring structural proteins are employed as backbones for functionalities for crosslinking to provide strongly adherent tissue adhesives and sealants. Particularly, block copolymers having repeating units of elastin and fibroin are employed having lysine substitutions in spaced apart units, where the amino group can be crosslinked using difunctional crosslinking agents. The protein polymer contains at least 40 weight percent of repetitive units of 3 to 30 amino acids of at least one naturally occurring structural protein and at least two functional groups capable of reacting with a crosslinking agent to form a strongly adherent adhesive composition for bonding together separated tissue or for sealing tissue defects. A preferred adhesive composition contains glutaraldehyde or polymethylene diisocyanate and a protein block copolymer of at least 30 kD containing at least 70 weight percent of repetitive units of Gly-Ala-Gly-Ala-Gly-Ser and Gly-Val-Gly-Val-Pro, where in at least two units an amino acid is substituted with one of lysine or arginine, and the copolymer has a lysine and arginine equivalent weight in the range of 3 to 15 kD. The protein polymer is produced by recombinant DNA technology, and a kit may be formed containing the crosslinking agent and protein polymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 2000:27551 USPATFULL

TITLE: Bonding together tissue with adhesive containing

polyfunctional crosslinking agent and protein polymer Stedronsky, Erwin R., San Clemente, CA, United States

INVENTOR(S): Stedronsky, Erwin R., San Clemente, CA, United S Cappello, Joseph, San Diego, CA, United States

Protein Polymer Technolgies, Inc., San Diego, CA,

United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6033654 20000307 APPLICATION INFO.: US 1996-642246 19960502 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1995-435641, filed

on 5 May 1995, now patented, Pat. No. US 5817303

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted

PRIMARY EXAMINER: Naff, David M.

LEGAL REPRESENTATIVE: Trecartin, Richard F.Flehr Hohbach Test Albritton &

Herbert LLP

NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
LINE COUNT: 3117

PATENT ASSIGNEE(S):

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 14 OF 22 USPATFULL on STN

TI Peptides comprising repetitive units of amino acids and DNA sequences encoding the same

AB Polypeptides comprising repetitive units of amino acids, as well as synthetic genes encoding the subject polypeptides are provided. The subject polypeptides are characterized by comprising repetitive units of amino acids, where the repetitive units are present in naturally occurring proteins, particularly naturally occurring structural proteins. The subject polypeptides find use in a variety of applications, such as structural components of prosthetic devices,

synthetic fibers, and the like.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 2000:10019 USPATFULL

TITLE: Peptides comprising repetitive units of amino acids and

DNA sequences encoding the same

INVENTOR(S): Ferrari, Franco A., La Jolla, CA, United States

Richardson, Charles, Florence, MT, United States Chambers, James, San Diego, CA, United States Causey, Stuart, Palo Alto, CA, United States Pollock, Thomas J., San Diego, CA, United States Cappello, Joseph, San Diego, CA, United States Crissman, John W., San Diego, CA, United States

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-175155, filed

on 29 Dec 1993, now patented, Pat. No. US 5641648 which

is a continuation-in-part of Ser. No. US 1993-53049,

filed on 22 Apr 1993, now abandoned which is a continuation of Ser. No. US 1987-114618, filed on 29 Oct 1987, now patented, Pat. No. US 5243038, issued on 7 Sep 1993 which is a continuation-in-part of Ser. No.

US 1986-927258, filed on 4 Nov 1986, now abandoned

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Degen, Nancy
ASSISTANT EXAMINER: Sandals, William
LEGAL REPRESENTATIVE:

LEGAL REPRESENTATIVE: Trecartin, Richard F.Flehr Hohbach Test Albritton &

Herbert LLP

NUMBER OF CLAIMS: 19 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 6111

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 15 OF 22 USPATFULL on STN

TI Methods for preparing synthetic repetitive DNA

AB Methods are provided for the production of large polypeptides containing repeating sequences of amino acids utilizing biochemical techniques, specifically DNA sequences coding for the expression of the large polypeptides. Systems utilizing exogenous transcriptional and translational regions to control the production of the large

polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:134864 USPATFULL

TITLE: Methods for preparing synthetic repetitive DNA INVENTOR(S): Ferrari, Franco A., La Jolla, CA, United States

Ferrari, Franco A., La Jolla, CA, United States Cappello, Joseph, San Diego, CA, United States Crissman, John W., San Diego, CA, United States Dorman, Mary A., San Diego, CA, United States

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5830713 19981103
APPLICATION INFO.: US 1996-707237 19960903 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-175155, filed on 29 Dec 1993, now patented, Pat. No. US 5641648 which

is a continuation-in-part of Ser. No. US 1993-53049,

filed on 22 Apr 1993, now abandoned which is a

continuation-in-part of Ser. No. US 1990-609716, filed

on 6 Nov 1990, now patented, Pat. No. US 5514581, issued on 7 May 1996 which is a continuation-in-part of

Ser. No. US 1988-269429, filed on 9 Nov 1988, now abandoned which is a continuation-in-part of Ser. No. US 1987-114618, filed on 19 Oct 1987, now patented, Pat. No. US 5243038, issued on 7 Sep 1993 which is a continuation-in-part of Ser. No. US 1986-927258, filed

on 4 Nov 1986, now abandoned

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Degen, Nancy

LEGAL REPRESENTATIVE: Trecartin, Richard F., Kresnak, Mark T.Flehr Hohbach

Test Albritton and Herbert

NUMBER OF CLAIMS: 37 EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 5084

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 16 OF 22 USPATFULL on STN

TI Bonding together tissue with adhesive containing polyfunctional crosslinking agent and protein polymer

AΒ Proteinaceous polymers having repetitive units from naturally occurring structural proteins are employed as backbones for functionalities for crosslinking to provide strongly adherent tissue adhesives and sealants. Particularly, block copolymers having repeating units of elastin and fibroin are employed having lysine substitutions in spaced apart units, where the amino group can be crosslinked using difunctional crosslinking agents. The protein polymer contains at least 40 weight percent of repetitive units of 3 to 15 amino acids of at least one naturally occurring protein and in at least two units an amino acid is substituted by an amino acid containing a functional group capable of reacting with a crosslinking agent to form a strongly adherent adhesive composition for bonding together separated tissue or for sealing tissue defects. A preferred adhesive composition contains glutaraldehyde or polymethylene diisocyanate and a protein block copolymer of at least 30 kD containing at least 70 weight percent of repetitive units of

Gly-Ala-Gly-Ser and Gly-Val-Gly-Val-Pro, where in at least two units an amino acid is substituted with lysine and the copolymer has a lysine equivalent weight in the range of 1 to 20 kD. The protein polymer is produced by recombinant DNA technology, and a kit can be formed containing the crosslinking agent and protein polymer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

PATENT ASSIGNEE(S):

ACCESSION NUMBER: 1998:122064 USPATFULL

TITLE: Bonding together tissue with adhesive containing

polyfunctional crosslinking agent and protein polymer Stedronsky, Erwin R., San Clement, CA, United States

INVENTOR(S): Stedronsky, Erwin R., San Clement, CA, United States

Cappello, Joseph, San Diego, CA, United States Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5817303 19981006
APPLICATION INFO.: US 1995-435641 19950505 (8)

DOCUMENT TYPE: Utility FILE SEGMENT: Granted
PRIMARY EXAMINER: Naff, David M.

LEGAL REPRESENTATIVE: Trecartin, Richard F., Kresnak, Mark T.Flehr Hohbach

Test Albritton and Herbert

NUMBER OF CLAIMS: 23 EXEMPLARY CLAIM: 1 LINE COUNT: 1156

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1ANSWER 17 OF 22 USPATFULL on STN

ΤI Products comprising substrates capable of enzymatic cross-linking AΒ Polymers are provided comprising protein polymers comprising blocks of repeating units and sequences comprising amino acids, individually or in defined sequences, capable of enzyme catalyzed covalent bond formation for cross-linking, as exemplified by glutamine and/or lysine reactive for FXIII catalyzed isopeptide formation or non-amino acid polymers having side chains comprising such amino acids or sequences, which may be used for preparation of articles of manufacture, particularly cross-linkable compositions. By appropriate choice of the polymer, resorbable implantable polymers may be used in internal applications for mammals as formed objects or depots.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. 1998:75722 USPATFULL ACCESSION NUMBER:

TITLE: Products comprising substrates capable of enzymatic

cross-linking

INVENTOR(S): Cappello, Joseph, San Diego, CA, United States INVENTOR(S):
PATENT ASSIGNEE(S): Protein Polymer Technologies, San Diego, CA, United

States (U.S. corporation)

NUMBER KIND DATE ______ PATENT INFORMATION: US 5773577 19980630 US 1995-397633 19950302 19950302 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1994-205518, filed

on 3 Mar 1994, now abandoned

DOCUMENT TYPE: Utility FILE SEGMENT: Granted

PRIMARY EXAMINER: Patterson, Jr., Charles L. ASSISTANT EXAMINER: Stole, Einar

LEGAL REPRESENTATIVE: Trecartin, Richard F.Flehr Hohbach Test Albritton &

Herbert LLP

NUMBER OF CLAIMS: 29 EXEMPLARY CLAIM: 1 LINE COUNT: 3006

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ANSWER 18 OF 22 USPATFULL on STN L1

High molecular weight collagen-like protein polymers ΤI

AΒ Collagen-like polymers having repetitive triads are produced having reduced proline content, where glycine is the initial amino acid and the subsequent amino acids are varied, while retaining at least a minimum percentage of prolines. The resulting polymers have collagen-like properties, but are capable of being produced in unicellular microorganisms at high molecular weights and in high efficiency. The polymers, while retaining collagen-like characteristics, include various novel sequences which impart new characteristics, finding wide use in photographic, medical, structural and fiber applications.

CAS INDEXING IS AVAILABLE FOR THIS PATENT. ACCESSION NUMBER: 1998:75399 USPATFULL

TITLE: High molecular weight collagen-like protein polymers

INVENTOR(S): Cappello, Joseph, San Diego, CA, United States Ferrari, Franco A., La Jolla, CA, United States

PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 5773249 19980630 APPLICATION INFO.: US 1996-642255 19960502 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1995-577046, filed on 22 Dec 1995 which is a continuation of Ser. No. US

1992-972032, filed on 5 Nov 1992, now patented, Pat. No. US 5496712, issued on 5 Mar 1996 which is a

continuation-in-part of Ser. No. US 1991-791960, filed

on 12 Nov 1991, now abandoned which is a

continuation-in-part of Ser. No. US 1990-609716, filed on 6 Nov 1990, now patented, Pat. No. US 5514581,

issued on 7 May 1996 which is a continuation-in-part of Ser. No. US 1988-269429, filed on 9 Nov 1988, now abandoned which is a continuation-in-part of Ser. No. US 1987-114618, filed on 29 Oct 1987, now patented, Pat. No. US 5243038, issued on 7 Sep 1993 which is a continuation-in-part of Ser. No. US 1986-927258, filed

on 4 Nov 1986, now abandoned

DOCUMENT TYPE: Utility FILE SEGMENT: Granted

PRIMARY EXAMINER: Patterson, Jr., Charles L.

LEGAL REPRESENTATIVE: Flehr Hohbach Test Albritton and Herbert LLP,

Trecartin, Richard F., Kresnak, Mark T.

NUMBER OF CLAIMS: 32 EXEMPLARY CLAIM: 1 LINE COUNT: 3042

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 19 OF 22 USPATFULL on STN

TI Peptides comprising repetitive units of amino acids and DNA sequences

encoding the same

AB Novel polypeptides comprising repetitive units of amino acids, as well as synthetic genes encoding the subject polypeptides are provided. The subject polypeptides are characterized by comprising repetitive units of amino acids, where the repetitive units are present in naturally occurring proteins, particularly naturally occurring structural proteins. The subject polypeptides find use in a variety of applications, such as structural components of prosthetic devices, synthetic fibers, and the like.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:72720 USPATFULL

TITLE: Peptides comprising repetitive units of amino acids and

DNA sequences encoding the same

INVENTOR(S): Ferrari, Franco A., La Jolla, CA, United States

Richardson, Charles, Florence, MT, United States Chambers, James, San Diego, CA, United States Causey, Stuart, Palo Alto, CA, United States Pollock, Thomas J., San Diego, CA, United States Cappello, Joseph, San Diego, CA, United States Crissman, John W., San Diego, CA, United States PATENT ASSIGNEE(S): Protein Polymer Technologies, Inc., San Diego, CA,

United States (U.S. corporation)

KIND

PATENT INFORMATION:	US 5770697	19980623
APPLICATION INFO.:	US 1995-477509	19950607 (8)

NUMBER

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1993-175155, filed

on 29 Dec 1993, now patented, Pat. No. US 5641648, issued on 24 Jun 1997 which is a continuation-in-part of Ser. No. US 1993-53049, filed on 22 Apr 1993, now abandoned which is a continuation of Ser. No. US 1987-114618, filed on 29 Oct 1987, now patented, Pat. No. US 5243038, issued on 7 Sep 1993 which is a

DATE

continuation-in-part of Ser. No. US 1986-927258, filed

on 4 Nov 1986, now abandoned

DOCUMENT TYPE: Utility FILE SEGMENT: Granted

PRIMARY EXAMINER: Ketter, James
ASSISTANT EXAMINER: Brusca, John S.
LEGAL REPRESENTATIVE: Trecartin, Richard F.

NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 14 Drawing Figure(s); 10 Drawing Page(s)

LINE COUNT: 3242

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 20 OF 22 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

TI Slow release protein polymers.

AB The invention features articles for delivery of a biologically active substance, methods for making such articles, and methods for treating an animal using the articles.

ACCESSION NUMBER: 2004:177201 BIOSIS DOCUMENT NUMBER: PREV200400179186

TITLE: Slow release protein polymers.

AUTHOR(S): Rowe, Stephen C. [Inventor, Reprint Author]; Yim, Kalvin

[Inventor]; Retnarajan, Beadle P. [Inventor]; Hubbell,
Jeffrey A. [Inventor]; Annavajula, Durga [Inventor]

CORPORATE SOURCE: North Andover, MA, USA

ASSIGNEE: Pelias Technologies, Inc., Washington, DC, USA

PATENT INFORMATION: US 6699504 20040302

SOURCE: Official Gazette of the United States Patent and Trademark

Office Patents, (Mar 2 2004) Vol. 1280, No. 1. http://www.uspto.gov/web/menu/patdata.html. e-file.

ISSN: 0098-1133 (ISSN print).

DOCUMENT TYPE: Patent LANGUAGE: English

ENTRY DATE: Entered STN: 31 Mar 2004

Last Updated on STN: 31 Mar 2004

L1 ANSWER 21 OF 22 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN

TI Functional recombinantly prepared synthetic protein polymer.

AB Novel polymers are provided which are produced by recombinant techniques. The polymers are characterized by having a small repeating sequence which provides for strands capable of associating, resulting in useful structural characteristics, where the strands are joined by turns or loops which are flexible and available for interaction with the environment. Specifically, repeating groups of naturally occurring proteins such as silk are modified by introduction of an amino-acid sequence at a site

which provides for a turn between strands to provide for readily available oligopeptides capable of interacting with molecules in the environment.

ACCESSION NUMBER: 2001:243672 BIOSIS DOCUMENT NUMBER: PREV200100243672

TITLE: Functional recombinantly prepared synthetic protein

polymer.

AUTHOR(S): Ferrari, Franco A. [Inventor]; Cappello, Joseph [Inventor]

CORPORATE SOURCE: ASSIGNEE: Protein Polymer Technologies, Inc.

PATENT INFORMATION: US 6140072 20001031

SOURCE: Official Gazette of the United States Patent and Trademark

Office Patents, (Oct. 31, 2000) Vol. 1239, No. 5. e-file.

CODEN: OGUPE7. ISSN: 0098-1133.

DOCUMENT TYPE: Patent LANGUAGE: English

ENTRY DATE: Entered STN: 23 May 2001

Last Updated on STN: 19 Feb 2002

L1 ANSWER 22 OF 22 BIOTECHDS COPYRIGHT 2009 THOMSON REUTERS on STN

TI Engineering protein-based machines to emulate key steps in metabolism (biological energy conversion);

recombinant protein polymer production with application to metabolic engineering

AN 1998-04032 BIOTECHDS

A unifying mechanism whereby proteins and protein-based polymers could AB perform the diverse energy conversions of living organisms was proposed. Monomer genes encoding one repeat each of nine tricosamer peptides, with 1 glutamic acid residue per 30 mer and an increasing number of phenylalanine residues replacing valine, were constructed using chemically synthesized ss oligonucleotides (oligos). These oligos were annealed at their complementary ends and extended. The genes were cloned into plasmid pUC118. The gene fragment for each tricosamer was purified from digested pUC118 and concatenated in the presence of phage T4 DNA-ligase and synthetic oligo cloning adapters. Concatamer genes were recovered by cloning into pUC118, characterized by gel electrophoresis and subcloned into vector plasmid pET13-d. Escherichia coli BL21(DE3) was transformed with pET13-d and cultured in a 2.5 or 28 l fermentor. The polymers were purified from cell supernatant. The polymers were used to demonstrate the interdependence of the waters of hydrophobic hydration, the onset temperature for the inverse temperature transition and

(47 ref)

the pKa.

ACCESSION NUMBER: 1998-04032 BIOTECHDS

TITLE: Engineering protein-based machines to emulate key steps in

metabolism (biological energy conversion);

recombinant protein polymer

production with application to metabolic

engineering

AUTHOR: Urry D W; Peng S Q; Hayes L C; McPherson D; Xu J; Woods T C;

Gowda D C; Pattanaik A

CORPORATE SOURCE: Univ.Alabama; Bioelastics-Research

LOCATION: Laboratory of Molecular Biophysics, The University of Alabama

at Birmingham, 1670 University Boulevard, Birmingham, AL

35294-0019, USA.

Email: danurry@uab.edu

SOURCE: Biotechnol.Bioeng.; (1998) 58, 2-3, 175-90

CODEN: BIBIAU ISSN: 0006-3592

DOCUMENT TYPE: Journal LANGUAGE: English

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(FILE 'HOME' ENTERED AT 06:43:28 ON 14 JUL 2009)

FILE 'MEDLINE, USPATFULL, HCAPLUS, BIOSIS, BIOTECHDS, DGENE, EMBASE, WPIDS, SCISEARCH' ENTERED AT 06:44:09 ON 14 JUL 2009

L1 22 S (PROTEIN POLYMER PRODUCTION)

0 S L1 AND (PROTEIN POLYMER CONJUGATE)

0 S L1 AND (METAL CHELATOR)

E HINDS, K/AU
E LEWIS, D/AU
E CAMPELL, K/AU
E SCHMIDT, P/AU

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L2 L3